

Appl. No. 10/717,313
Amdt. Dated 4/07/2005
Reply to Office Action of January 7, 2005

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended) An apparatus comprising:
an electronic component that generates heat;
a body that encloses the electronic component[,,] and has a bottom panel;
a pump having a heat receiving portion thermally connected to the electronic component;
a heat radiating portion that radiates the heat received by the heat receiving portion, the
heat radiating portion forming a part of the bottom panel; and
a liquid cooling path inside which liquid coolant is circulated by the pump, the liquid
cooling path being thermally coupled to the heat receiving portion and the heat radiating portion.
2. (Original) The apparatus according to claim 1, wherein the heat radiating portion
includes an air channel thereon.
3. (Original) The apparatus according to claim 2, further comprising a fan arranged
in the bottom panel, which moves air over the air channel.
4. (Original) The apparatus according to claim 3, wherein the exterior surface of the
air channel has a corrugated configuration.
5. (Original) The apparatus according to claim 4, wherein the fan is adapted to draw
from the surrounding ambient airspace.
6. (Original) The apparatus according to claim 4, wherein the fan is adapted to draw
from the interior of the body.
7. (Original) The apparatus according to claim 4, wherein the fan is adapted to draw
simultaneously from the surrounding ambient airspace and the interior of the body.

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8. (Currently Amended) ~~An~~ The apparatus according to claim 1, wherein comprising:
an electronic component that generates heat;
a body that encloses the electronic component and has a bottom panel, the bottom panel includes an inclined portion forming an obtuse angle with a remaining portion of the bottom panel;
a heat receiving portion thermally connected to the electronic component with, and, the inclined portion has being a part of the heat radiating portion;
a heat radiating portion that radiates the heat received by the heat receiving portion, the heat radiating portion forming a part of the bottom panel; and
a liquid cooling path inside which liquid coolant is circulated, the liquid cooling path being thermally coupled to the heat receiving portion and the heat radiating portion.

9. (Original) The apparatus according to claim 8, wherein the liquid cooling path is arranged to transfer heat from the liquid coolant to the inclined portion.

10-11. (Cancelled)

12. (Original) An apparatus for cooling an electronic component that generates heat, the apparatus comprising:

a body that encloses the electronic component;
a bottom panel that forms a part of the exterior surface of the body ;
means for providing an air channel in the bottom panel;
means for transferring heat from the electronic component to a liquid coolant and from the liquid coolant to the bottom panel; and
means for moving air between an interior of the body and a surrounding ambient airspace such that a substantial portion of the air is moved over an exterior surface of the air channel.

13. (Original) The apparatus according to claim 12, wherein the exterior surface of the air channel has a corrugated configuration.

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14. (Original) The apparatus according to claim 12, wherein the bottom panel further includes an inclined portion forming an obtuse angle with a remaining portion of the bottom panel.

15. (Original) The apparatus according to claim 14, further comprising means for transferring heat from the liquid coolant to the inclined portion.

16. (Original) The apparatus according to claim 12, wherein air is moved from the surrounding ambient airspace to the interior of the body.

17. (Original) The apparatus according to claim 12, wherein air is moved from the interior of the body to the surrounding ambient airspace.

18. (Original) The apparatus according to claim 12, wherein air is moved simultaneously from the surrounding ambient airspace, from the interior of the body, and to the surrounding ambient airspace.

19. (Original) The apparatus according to claim 12, further comprising means for circulating the liquid coolant between the electronic component and the bottom panel.

20. (Currently Amended) An apparatus comprising:
a body having a bottom panel;
an electronic component enclosed by the body;
a heat receiving portion thermally coupled to the electronic component;
a heat radiating portion including an air channel, the heat radiating portion ~~forms-forming~~
a part of the bottom panel and ~~radiates-radiating~~ heat received by the heat receiving portion; and
a liquid cooling path including a liquid coolant and thermally coupled to the heat
receiving portion and the heat radiating portion; and
a pump to circulate the liquid coolant in the liquid cooling path.

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21. (New) The apparatus according to claim 20, wherein the heat receiving portion is formed outside the pump.

22. (New) The apparatus according to claim 1, wherein the bottom panel includes an inclined portion forming an obtuse angle with a remaining portion of the bottom panel, the inclined portion being a part of the heat radiating portion.

23. (New) The apparatus according to claim 22, wherein the liquid cooling path is arranged to transfer heat from the liquid coolant to the inclined portion.